



FAA-E-2524
May 5, 1972

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION SPECIFICATION

CABLE, RADIO FREQUENCY, FOAM DIELECTRIC, 1/2 INCH AND 7/8 INCH, CORRUGATED TYPE

1. SCOPE

1.1 Scope. - This specification covers the requirements of FAA for two sizes of semirigid, 50 ohm, corrugated outer conductor, coaxial cables having the electrical and physical characteristics required herein.

2. APPLICABLE DOCUMENTS

2.1 Military specifications and drawings. - The following Military documents of the issue in effect on the date of the invitation for bid or request for proposals, form a part of this specification and are applicable to the extent specified herein.

Specification MIL-C-23806	Cable, Radio Frequency, Coaxial, Semirigid, Foam Dielectric, General Specification, and applicable specification sheets.
Specification MIL-C-17	Cables, Radio Frequency, Coaxial
Drawing C-RE49C828	Cable, Radio Frequency, RG-366/U (1/2 Inch)
Drawing C-RE-C2696076	Cable, Radio Frequency, RG-376/U (7/8 Inch)

2.2 National Electrical Manufacturers Association.- The following NEMA standard of the issue in effect on the date of the invitation for bids or request for proposals, forms a part of this specification and is applicable to the extent specified herein.

WC-21 Non-returnable Reels for Wire and Cable

2.3 Federal specification.- The following Federal specification of the issue listed, forms a part of this specification to the extent specified herein.

LP-390-C, Plastic Molding and Extrusion
8/10/71 Material

(Copies of this specification may be obtained from the Contracting Officer in the Federal Aviation Administration Office issuing the invitation for bids or request for proposals. Requests should fully identify material desired, i.e., specification, standard, amendment, and drawing numbers and dates. Requests should cite the invitation for bids, request for proposals, or the contract involved or other use to be made of the requested material.)

(Single copies of the Military specifications may be requested by mail or telephone from the U. S. Navy Supply Depot, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120. For telephone requests call 215-697-3321, 8:00 a.m. to 4:30 p.m., Monday through Friday. Not more than five items may be ordered on a single request; the invitation for bids or the contract number shall be cited where applicable.)

(Single copies of Military Drawings C-RE49C828 and C-RE-C2696076 may be obtained from Department of the Navy, Naval Ship Engineering Center, Norfolk Division, Naval Station, Norfolk, Virginia 23511.)

(Information on obtaining copies of NEMA standards may be obtained from National Electrical Manufacturers Association, 155 East 44th Street, New York, New York 10017.)

(Information on obtaining copies of Federal specifications and standards may be obtained from General Services Administration offices in Washington, D.C.; Denver; Seattle; San Francisco; Kansas City, Mo.; Chicago; Atlanta; New York; Boston; Dallas; and Los Angeles.)

2.4 Precedence of specifications.- In the event of conflict between this specification and MIL-C-23806, MIL-C-17 or Drawing C-RE49C828 or Drawing C-RE-C2696076, the provisions of this specification shall govern.

3. REQUIREMENTS

3.1 Cable.- The cable shall conform to the requirements of both the referenced drawings, whichever is applicable, with the following exceptions and alternatives:

- (a) Inner conductor shall be either copper or copper covered aluminum. The aluminum conductor core shall be continuously copper coated, without joints, and with metallurgical bonding of the aluminum and copper. Nominal cross section of copper to aluminum shall be 15 percent throughout the length of the conductor.
- (b) The foam dielectric shall be polyethylene or equivalent, either natural or white.
- (c) The outer conductor shall be either copper or aluminum, corrugated and hermetically seam welded in such a manner as to meet or exceed (1) the bending requirements of paragraph 4.3, and (2) all other physical and electrical requirements necessary to the specified or intended performance characteristics. Nominal diameter over the outer conductor corrugation crest shall be 1/2 inch or 7/8 inch as specified. The corrugation configuration may be the manufacturers particular type.
- (d) The flooding compound shall be a material compatible with the jacket, noncorrosive to the outer conductor and removable with common solvents to facilitate attachment of fittings.
- (e) The jacket shall be a polyethylene compound complying with Type 3, Class L, Grade 4 of Federal Specification LP-390-C. A jacket spark test shall be performed in accordance with paragraph 4.4. Jacket imperfections no larger than one-quarter inch in any direction may be repaired with use of jacket grade compound and heat fusing. Jacket thickness shall comply with the respective referenced military drawing.
- (f) Marking on the jacket shall be "FAA-RG-366" for the 1/2 inch size and "FAA-RG-376" for the 7/8 inch size, as applicable, and manufacturers name. Additional marking may be added at the manufacturers option. Marking shall be at approximately every two feet, and capable of withstanding defacement during normal handling practices.

3.2 General construction.- The cable shall be suitable for either direct earth burial, in duct or overhead applications.

3.2.1 Bending radius.- The minimum bending radius of the 1/2 inch size shall be five inches and ten inches for the 7/8 inch size.

3.2.2 Adaptors.- Adaptors shall be commercially and readily available for fitting the cable to standard type N male and female, and standard type UHF male and female connectors.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for testing.- The tests specified in the referenced Military drawings and as further listed herein shall be performed by the contractor on the completed cable at his plant and may be witnessed by a Government representative. The Government reserves the right to waive inspection; in lieu thereof, the contractor shall furnish certified test data showing compliance with specification requirements.

4.2 Test equipment.- The contractor shall furnish all facilities and test equipment necessary for factory tests. Where tolerances are cited, test instruments used shall have rated accuracies which are not less than three times better than the tolerances of the quality being measured.

4.3 Bending characteristics.- The completed cable shall meet the following bending test:

<u>Cable</u>	<u>Mandrel size</u>	<u>Bending radius</u>
1/2 inch	10 inches	5 inches
7/8 inch	20 inches	10 inches

Bending of the cable sample over the mandrel shall not be less than 90 degrees. Ten 90 degree reverse bends of the sample shall be performed over the mandrel. There shall be no buckling or cracking of the cable, nor any change in impedance or dielectric test values.

4.4 Spark test.- The jacket shall pass a spark test at a minimum of either 5 KV AC or 7 KV DC. Jacket failures at a rate of five or more per 1,000 feet of cable shall cause rejection of that length of cable. Imperfections of four or less per 1,000 feet may be treated per paragraph 3.1e.

5. PREPARATION FOR DELIVERY

5.1 Cable length per reel.- Each reel shall contain one continuous 1,000 foot length of cable without splices.

5.2 Reels.- The cable shall be shipped on reels complying with WC-21, Wood Reels. Reels shall be new and capable of protecting cable from damage for at least two extended shipments by rail or truck. Plywood reels are not acceptable. Reels shall be lagged with nominal 2-inch by 4-inch No. 2 common lumber and strapped with two or more steel straps over lagging.

5.2.1 Marking.- A minimum of the following marking shall be legibly applied on both reel flanges in permanent type ink or paint:

Contractor's name and address.

Contract or order number under which purchases was made.

Reel serial number.

Quantity, size and type of cable on reel. Cable, type marking shall include "FAA-RG-366/U" or "FAA-RG-376/U" as applicable.

Name and address of consignee.

6. NOTES

6.1 Note on information items.- The subparagraphs below are only for the information of the Contracting Officer, intended to assist him in formulating a contract. They are not contract requirements, nor binding on either the Government or the contractor, except to the extent that they may be specified elsewhere in the contract as such. Any reliance placed by the contractor on the information in these subparagraphs is wholly at the contractor's own risk.

6.2 Cable size.- The size cable required, 1/2 inch or 7/8 inch, or quantities of each, must be included in procurement data.

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